WHAT IS CLAIMED IS:

1. A heart-sound detecting apparatus, comprising:

a heart-sound microphone which detects a plurality of heart sounds produced by a heart of a living subject and outputs a heart-sound signal representative of the detected heart sounds;

a smoothing means for smoothing, by differentiation, a waveform of the heart-sound signal output from the heart-sound microphone;

a squaring means for squaring an amplitude of the smoothed waveform with respect to a base line of the heart-sound signal; and

a start-point determining means for determining a start point of a first heart sound I as one of the detected heart sounds, based on that the squared amplitude is greater than a prescribed threshold value.

2. An apparatus according to claim 1, further comprising a high-pass filter which passes a component of the heart-sound signal output from the heart-sound microphone, the component having frequencies which are not lower than a lowest signal-pass frequency of the high-pass filter that is lower, by not less than a prescribed value, than a lowest frequency of the first heart sound I, wherein the smoothing means smoothes, by differentiation, the component of the heart-sound signal which has passed through the high-pass filter.

3. An apparatus according to claim 1, further comprising an electrocardiograph which includes a plurality of electrodes adapted to be worn at a plurality of locations on the subject and which detects, through the electrodes, an electrocardiogram of the subject, wherein the start-point determining means determines, as a start point of a judging period to judge whether the squared amplitude is greater than the prescribed threshold value, a time point during a time period between a Q-wave and an R-wave of the electrocardiogram detected by the electrocardioraph, and determines, during the judging period, the start point of the first heart sound I based on a judgment that the squared amplitude is greater than the prescribed threshold value.

4. A system for obtaining information relating to a propagation velocity at which a pulse wave propagates along an artery of a living subject, the system comprising:

a heart-sound detecting apparatus according to claim 1;

a pulse-wave detecting device which is adapted to be worn on the subject to detect the pulse wave which propagates along the artery of the subject; and

a pulse-wave-propagation-velocity-relating-information obtaining means for obtaining said information based on a time of the start point of the first heart sound I determined by the start-point determining means of the heart-sound detecting apparatus, and a time when a rising point of the pulse wave is

detected by the pulse-wave detecting device.

5. A system according to claim 4, wherein the pulse-wave-propagation-velocity-relating-information obtaining means comprises a pulse-wave-propagation-time determining means for determining, based on the time of the start point of the first heart sound I, and the time when the rising point of the pulse wave is detected by the pulse-wave detecting device, a propagation time needed for the pulse wave to propagate from the heart to a position where the pulse-wave detecting device is worn on the subject.

6. A system according to claim 4, wherein the pulse-wave-propagation-velocity-relating-information obtaining means comprises a pulse-wave-propagation-velocity determining means for determining the propagation velocity at which the pulse wave propagates, by dividing a distance from the heart to a position where the pulse-wave detecting device is worn on the subject by a time difference between the time of the start point of the first heart sound I and the time when the rising point of the pulse wave is detected by the pulse-wave detecting device.

7. A system according to claim 4, further comprising an output device which outputs the information obtained by the pulse-wave-propagation-velocity-relating-information obtaining means, so that an observer can observe the

output information.

8. An apparatus according to claim 1, wherein the squaring means squares an amplitude of each of a plurality of data points on the smoothed waveform with respect to the base line of the heart-sound signal, and the start-point determining means determines the start point of the first heart sound I based on that the squared amplitude of said each data point is greater than the threshold value.